1-22. (CANCELED)

23. (PREVIOUSLY SUBMITTED) A method for diagnosing a transmission of a motor vehicle by analyzing oil flowing within the transmission and detecting ferritic wear particles which accumulate within the oil during operation of the transmission, the method comprising the steps of:

placing a reed contact (1) in an upper region of an oil duct (4) of the transmission and locating a capturing magnet (2), opposite from the reed contact (1), in a lower region of the oil duct (4);

accumulating the ferritic wear particles on the capturing magnet (2) and producing a magnetic flux density, via the capturing magnet (2), over a cross-section of the oil duct (4) with the magnetic flux density changing due to accumulation of the ferritic wear particles (2) on a surface of the capturing magnet (2);

using a sensor, built into an oil duct (4) of the transmission, as part of the measurement system;

detecting the change in the magnetic flux density by the reed contact (1) and producing an output signal from the reed contact (1) which is indicative of a condition of the transmission for determining when serving of the transmission is necessary; and

displaying, via an indicator, that servicing of the transmission is required.

24. (NEW) A method for diagnosing a machine by analysis of oil flowing within the machine to detect ferritic wear particles accumulated within the oil, the method comprising the steps of:

placing a magnetic flux sensor in an first region of an oil duct of the machine and locating a capturing magnet in a second region of the oil duct wherein the capturing magnet produces a magnetic flux density in a cross section of the oil duct including the first region such that the magnetic flux sensor is held in a first state;

accumulating the ferritic wear particles on the capturing magnetic wherein the magnetic flux density in the first region changes with an accumulation of the ferritic wear particles on the capturing magnet; and

detecting when the accumulation of ferritic wear particles reaches a certain amount when the resulting change in the magnetic flux density causes the magnetic flux sensor to change from the first state to a second state.

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25. (NEW) The method according to claim 24 further comprising the step of using a reed contact as the magnetic flux sensor.

26. (NEW) The method according to claim 24 further comprising the step of using a transmission as the machine.

27. (NEW) The method according to claim 24 further comprising the step of locating the first region is in an upper part of the oil duct, and locating the second region is in a lower part of the oil duct.

28. (NEW) The method according to claim 24 further comprising the step of indicating, with a change in the magnetic flux sensor from the first state to the second state, that servicing of the machine is indicated.

29. (NEW) The method according to claim 24 further comprising the step of adjusting an effectiveness and a sensitivity of the sensor by virtue of positioning and technical characteristics of the capturing magnet and the magnetic flux sensor to adapt the system for a different environment.

30. (NEW) A device for diagnosing a machine by analysis of oil flowing within the machine to detect ferritic wear particles accumulated within the oil, the device comprising:

a magnetic flux sensor located in an first region of an oil duct of the transmission and

a capturing magnet located in a second region of the oil duct, wherein

the capturing magnet produces a magnetic flux density in a cross section of the oil duct including the first region such that an initial magnetic flux density in the first region is sufficient to hold the magnetic flux sensor in a first state; and

ferritic wear particles accumulate on the capturing magnetic such that the magnetic flux density in the first region changes with an accumulation of the ferritic wear particles on the capturing magnet; and

the magnetic flux sensor indicates when the accumulation of ferritic wear particles reaches a certain amount when the resulting change in the magnetic flux density causes the magnetic flux sensor to change from the first state to a second state..

31. (NEW) The device according to claim 30 wherein the magnetic flux sensor is a reed contact.

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32. (NEW) The device according to claim 30 wherein the machine is a transmission.

33. (NEW) The device according to claim 30 wherein the first region is in an upper part of the oil duct, and the second region is in a lower part of the oil duct.

34. (NEW) The device according to claim 30 wherein a change in the magnetic flux sensor from the first state to the second state indicates that servicing of the machine is indicated.

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